

WHAT IS CLAIMED IS:

1. A method for preventing signal lock onto a reflected light beam received by a photodetector of an optical wireless link, wherein the reflected
5 light beam was transmitted by a light transmitter of the same optical wireless link:

receiving a light beam at the photodetector;

demodulating data carried on the received light beam;

parsing the demodulated data;

- 10 determining an origin of the demodulated data based on the parse;

and

permitting signal lock if the origin of the received light beam is different from the optical wireless link containing the photodetector.

- 15 2. The method of claim 1, further comprising the step of appending a unique identifier to data being transmitted on the light beam prior to transmission.

3. The method of claim 2, wherein the unique identifier is a network
20 address of the optical wireless link transmitting the data.

4. The method of claim 3, wherein the network address is unique to the optical wireless link.

5. The method of claim 2, wherein the unique identifier is a uniquely
5 calculated data value that is ensured of being unique to the optical wireless link transmitting the data.

6. The method of claim 2, wherein the parsing step comprises
searching for the presence of the unique identifier in the demodulated data.

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7. The method of claim 6, wherein the determining step comprises:
finding that the origin is different from the receiving optical wireless
link if the unique identifier is absent from the demodulated data; and
finding that the origin is the same as the receiving optical wireless link
15 if the unique identifier is present in the demodulated data.

8. The method of claim 1, further comprising the step of monitoring data
transmitted on the light beam prior to transmission.

20 9. The method of claim 8, wherein the parsing step comprises
comparing the demodulated data with the monitored data.

10. The method of claim 9, wherein the determining step comprises:

finding that the origin is different from the receiving optical wireless link if the demodulated data and the monitored data are different; and

5 finding that the origin is the same as the receiving optical wireless link if the demodulated data and the monitored data are the same.

11. The method of claim 1, further comprising the step of ignoring the received light beam if the origin of the demodulated data was the same as

10 receiving optical wireless link, subsequent to the determining step.

12. The method of claim 1, wherein the permitting signal lock step further comprises:

retrieving positional data from the demodulated data;

15 transmitting the positional data on a second light beam; and

aligning the light transmitter to the positional data received from the demodulated data.

13. An optical wireless link comprising:

a light beam transmitter configured to transmit a first light beam;

a photodetector configured to receive a second light beam; and

a processing element coupled to the light beam transmitter and the

5 photodetector, the processing element containing circuitry to detect the origin of data received on the second light beam.

14. The optical wireless link of claim 13, wherein the processing element comprises:

10 a reflection detection unit coupled to the photodetector, the reflection detection unit containing circuitry to detect the origin of the data received on the second light beam; and

a memory coupled to the reflection detection unit, the memory to store the received data.

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15. The optical wireless link of claim 14, wherein the memory further stores a unique identifier used to detect the origin of the received data.

16. The optical wireless link of claim 14, wherein the memory further
20 stores monitored data from transmissions originating from the optical wireless link.

17. The optical wireless link of claim 13, wherein the optical wireless link further comprises a memory coupled to the processing element, the memory to store the received data.

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18. The optical wireless link of claim 13, wherein the first light beam is steered by a controllable micromirror.

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19. A method of communicating between two data devices comprising:
- coupling a first data device to a first optical wireless link;
 - coupling a second data device to a second optical wireless link;
 - aligning the first and second optical wireless links, the aligning step
- 5 comprising:
- (a) detecting a first light beam at the second optical wireless device;
 - (b) determining the origin of the first light beam;
 - (c) echoing a first position information back to the first optical
- 10 wireless device if the origin of the first light beam is different from the second optical wireless device;
- (d) detecting a second light beam at the first optical wireless device;
 - (e) determining the origin of the second light beam;
- 15 (f) echoing a second position information back to the second optical wireless device if the origin of the second light beam is different from the first optical wireless device;
- (g) aligning the first light beam to a position indicated by the second echoing step;
- 20 (h) aligning the second light beam to a position indicated by the first echoing step; and

communicating data between the first and second data devices over
the first and second light beams, subsequent to the aligning steps.

20. The method of claim 19, wherein the aligning step further comprising:

5 (c1) repeating steps (a)-(c) if the origin of the first light beam is the
second optical wireless device; and

(f1) repeating steps (d)-(f) if the origin of the second light beam is the
first optical wireless device.

10 21. The method of claim 19, wherein the coupling between the data
devices and the optical wireless links are electrical.

22. The method of claim 19, wherein the coupling between the data
devices and the optical wireless links are wireless.

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23. The method of claim 22, wherein the wireless coupling exchanges
data using radio frequency signaling.

24. The method of claim 19, wherein the determining steps comprises
20 comparing data demodulated from the received light beams with unique
identifiers associated with the optical wireless devices and the origin of the

light beam is the same as the receiving optical wireless device if the unique identifier is found in the demodulated data.

25. The method of claim 19, wherein the determining steps comprises
5 comparing data demodulated from the received light beams with monitored data from transmissions from the receiving optical wireless device and the origin of the light beam is the same as the receiving optical wireless device if the monitored data is identical as the demodulated data.

10 26. The method of claim 19, wherein at least one the first and second data devices is a computer.

27. The method of claim 19, wherein at least one of the first and second data devices is a network.

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28. The method of claim 19, wherein at least one of the first and second optical wireless links is a modem.